



Lone Star Region

National Model Railroad Association

Retaining and Structure Walls

-Mike Jobe

Wall Clinic

- Structure Walls
 - Adobe
- Retaining Walls
 - Concrete
 - Rock Version
- Other Varieties



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Structure Walls

What you have already learned



We have covered in depth
Wooden Walls





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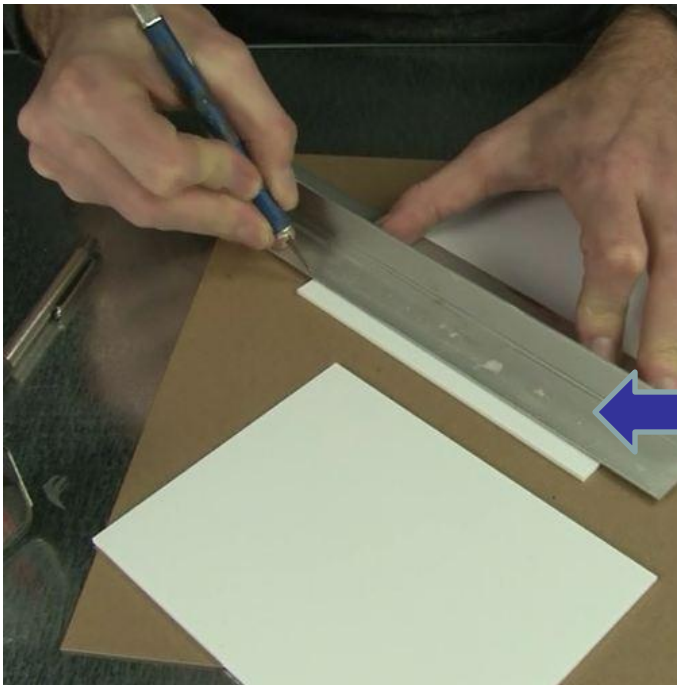
Adobe/Stucco Walls

Adobe/Stucco Walls



Adobe Walls – The Mold

Take some .40 Styrene for the Base and sides of the mold.



Using the same material to cut the side walls that will be used as a dam for the plaster, typically these are $\frac{1}{4}$ " to $\frac{1}{2}$ " depending on your scale.

Adobe Walls – The Mold

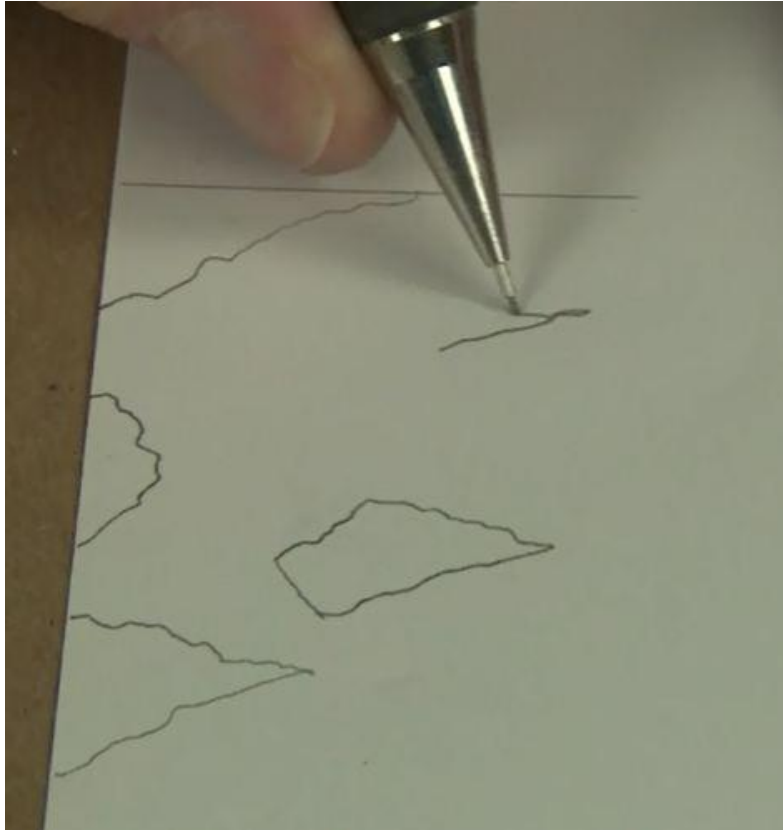


Draw the wall sized square on the base so that your dam walls are the appropriate size for the overall structure. This is where your plan is really important for you will repeat this 4 time for each wall of the building.

Glue the cut dam wall sections over the lines you just drew. This will create the mold and contain the wet plaster with the wall size when you pour.

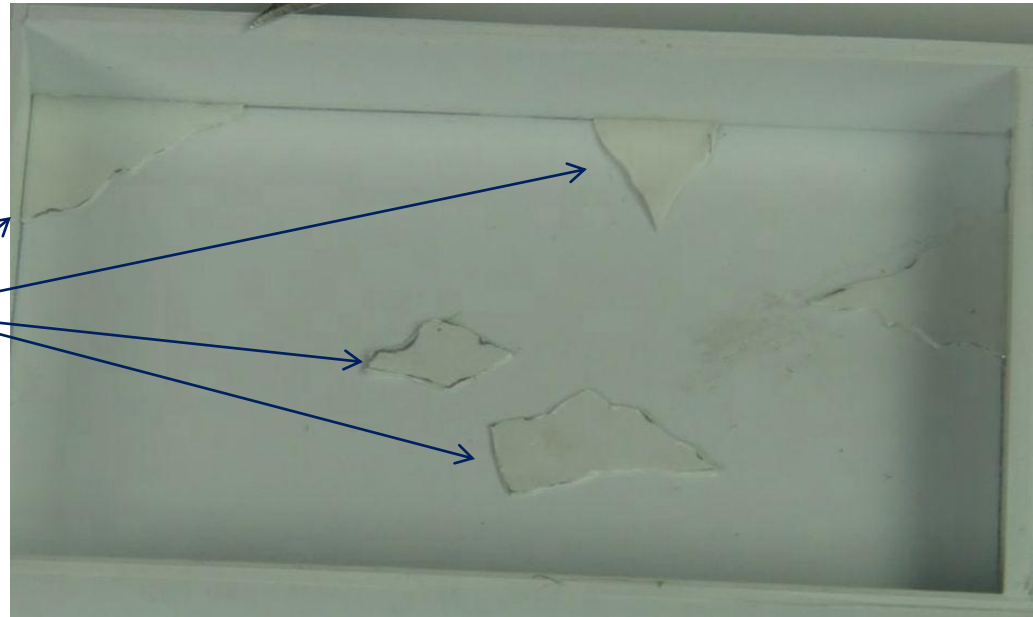


Adobe Walls – The Mold



Using .10 Styrene draw out the various shapes that will be used to expose the bricks underneath the stucco. Once you have drawn them out, use a razor and cut them out.

Glue these pieces in various areas of the mold as seen here

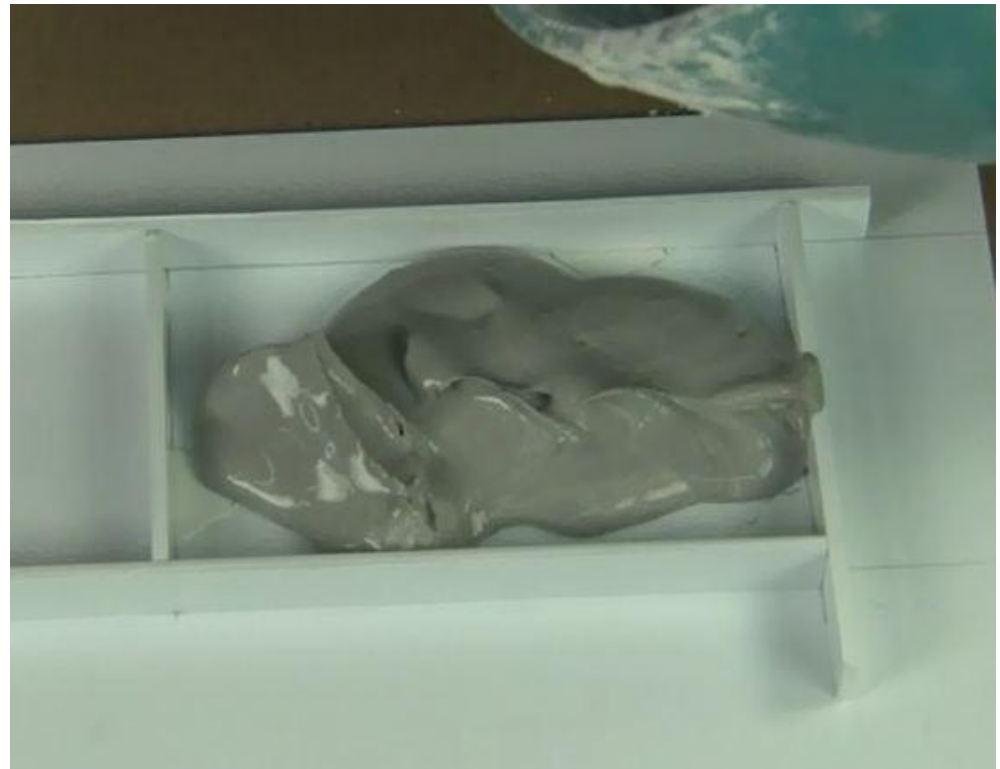


Adobe Walls – The Pour



Mix the water and the plaster, add Higgins water based ink to the mix so that if the wall chips, it will be darker color versus white.

Using a flat sided knife or spatula, add the plaster into the mold.

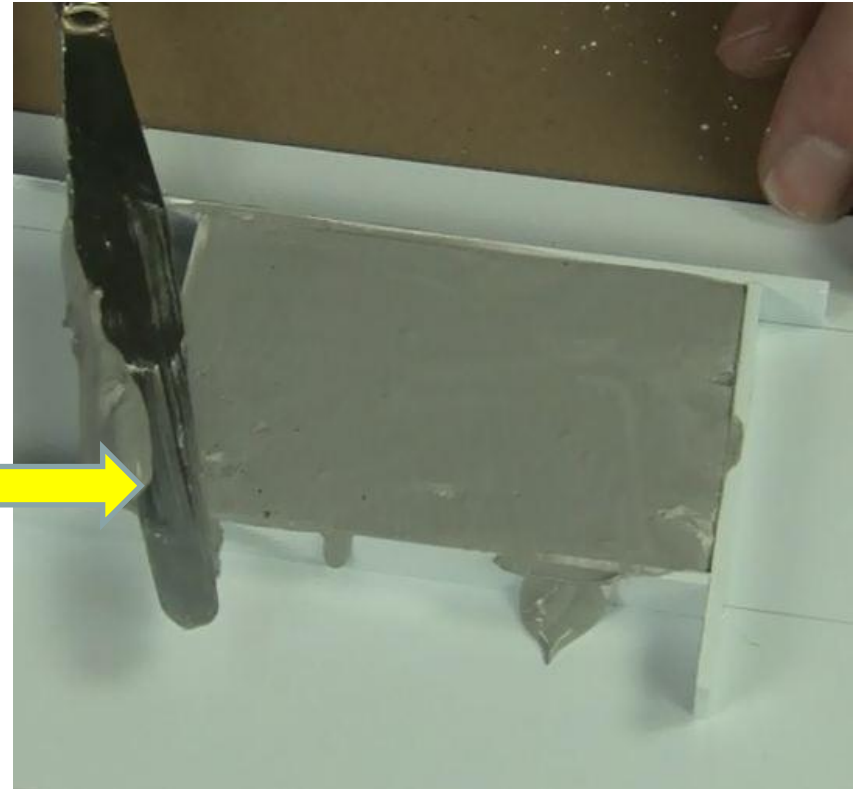


Adobe Walls – The Pour



Once poured lightly drop the mold several times so the plaster levels out and the air bubbles come to the top.

Once you fill all of the bubbles are out and the mold is full, skim the excess off with the knife.

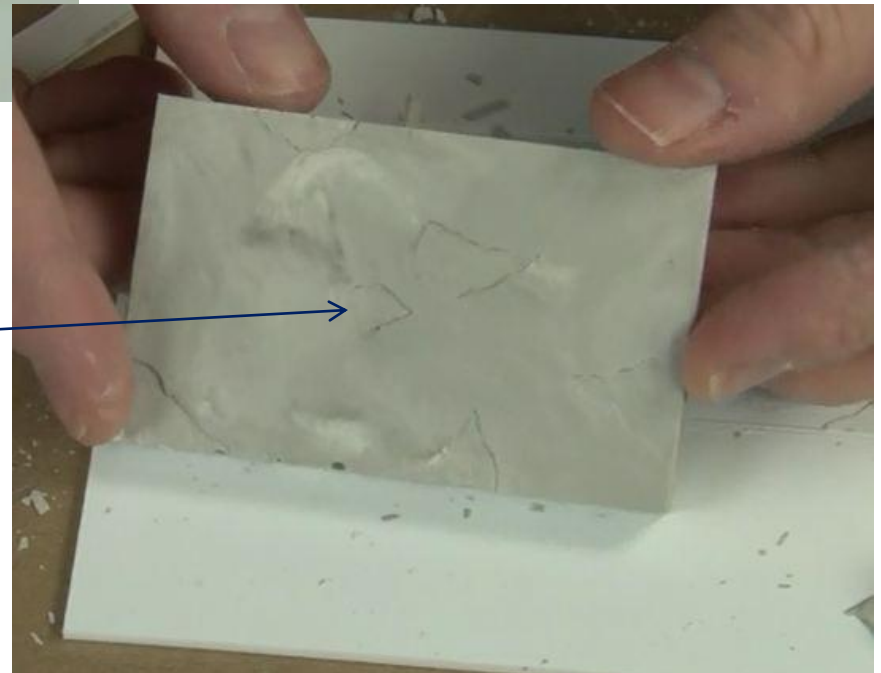


Adobe Walls



After about 30 minutes (the longer the better) remove the dam walls slowly by peeling them back away from the plaster.

Slowly remove the casting to reveal the new wall section, note the areas where you placed the .10 styrene.



Adobe Walls – Completion



Take a straight edge and carve out the bricks into the areas where you placed the plastic pieces. First do the horizontal lines, try to keep uniform in size and width.

Once the horizontal lines are carved, then start adding the vertical ones remember how bricks are stacked and carve accordingly.



Adobe Walls – Completion

The exposed brick area should look like this when the wall is complete.



Adobe/Stucco Walls





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Retaining Walls



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Concrete Wall

Concrete Wall



Back in the day, workers would use wood planking to make the forms before pouring the concrete. This gave the wall when finished a distinct look.



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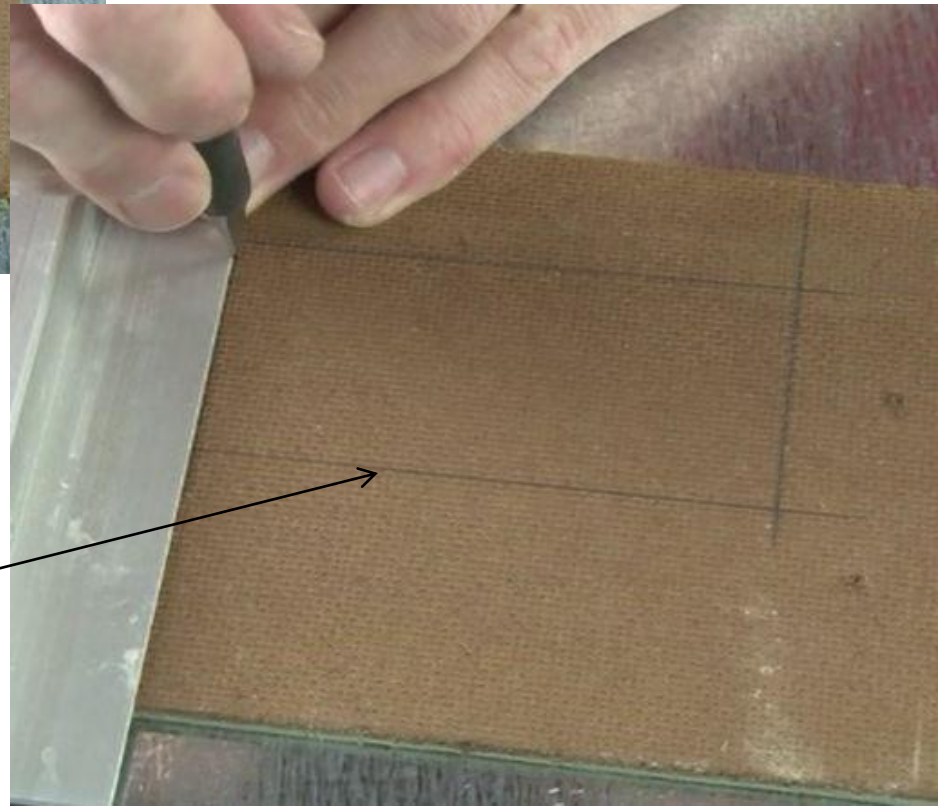


Concrete Wall – The Mold

Instead of Styrene we will use Masonite as the base for your mold.



Determine the wall size and draw that on to the Masonite as shown.

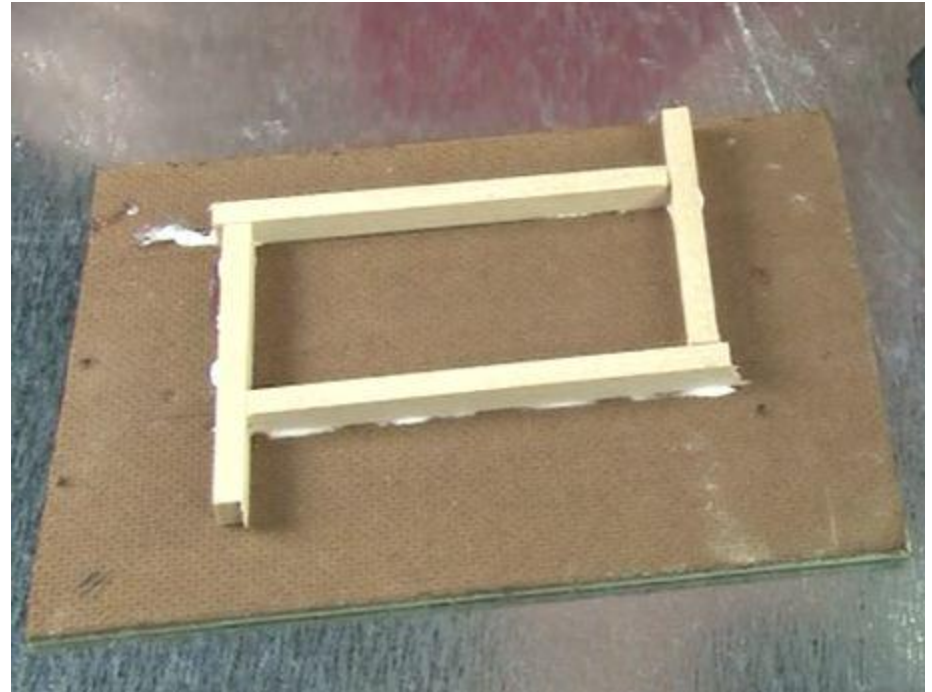


Concrete Wall – The Mold



Cut lengths of wood timbers to size to create the dam sides. The thickness of the wood will determine the thickness of the wall as well.

As with the previous wall we are going to glue the dam sides to the Masonite along the lines you previously drew.

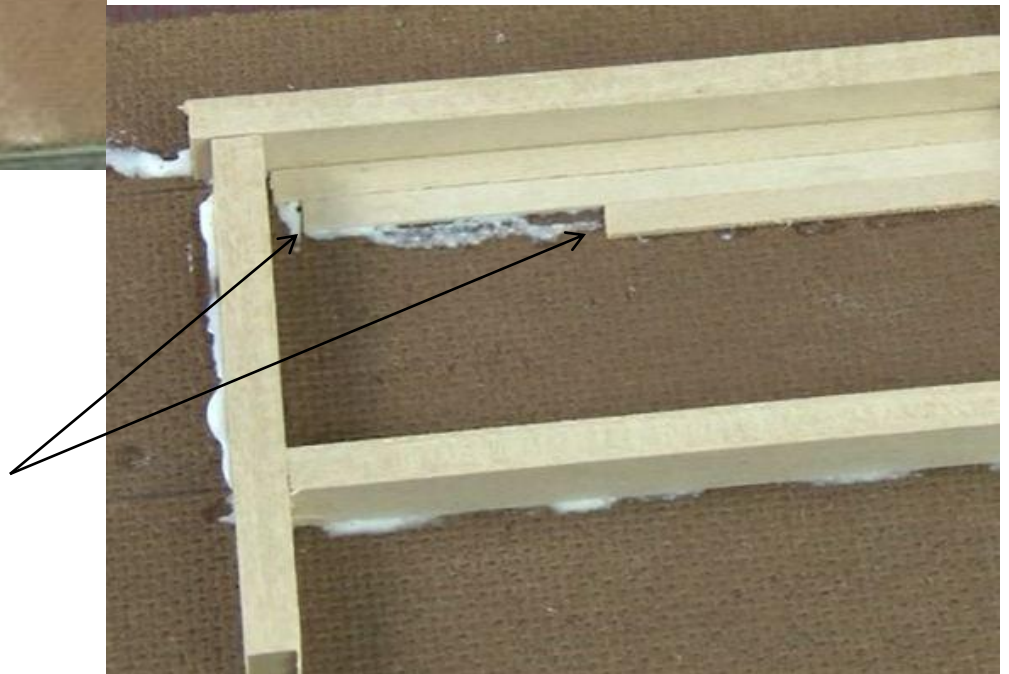


Concrete Wall – The Mold



Begin to add planks to the inside of the mold, take some time to distress the wood, adding knots, grain, etc. This will show up on the wall casting once complete.

As you add additional planks you want to make sure that you cut some before you reach the end, this will cause the casting to have a butt joint on a couple of rows. You don't want a perfect set of planks.

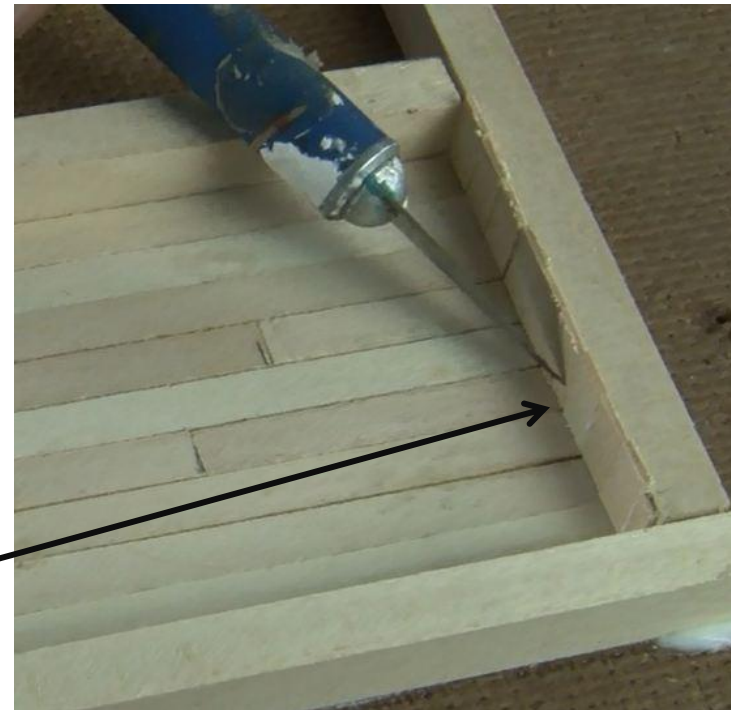


Concrete Wall – The Mold



Adding gaps and distress will be transferred to the plaster mold and give it more character.

If the side of the walls will be exposed and viewable, add small cuts to the sides so that the casting will appear to have been boxed in with planking before the concrete was poured.



Concrete Wall – The Pour



As you did in the previous casting, mix and pour the plaster into the mold, working out the bubbles and leveling the pour.

Allow time to thoroughly dry.



Concrete Wall – The Pour



Using the razor begin to score around the top of the casting, you want to use the scoring as a very light wedge to separate the wood from the casting rather than cutting through the casting

Also score along the base of the mold and dam walls. Carefully removing the walls from the casting.

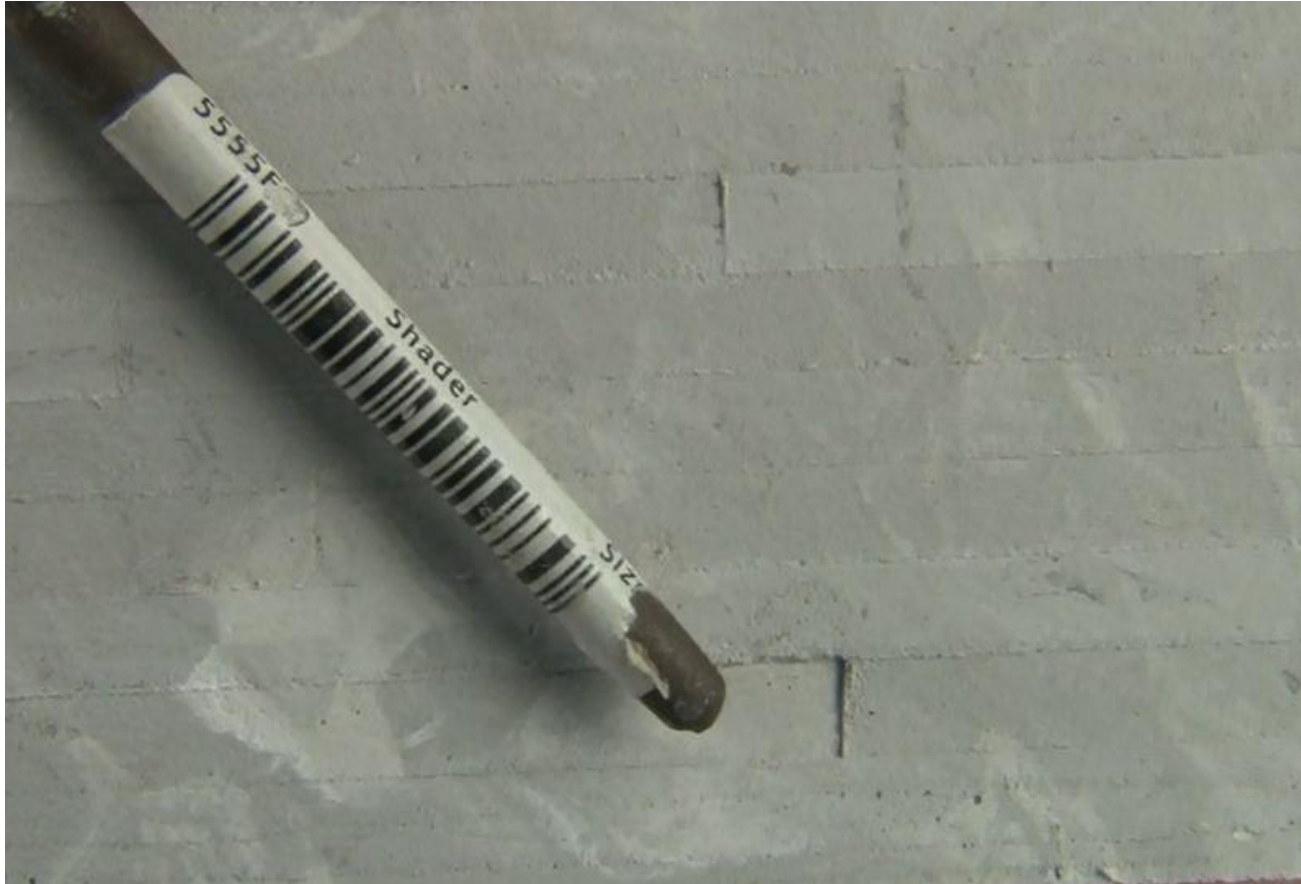


Concrete Wall – The Pour

Remove the walls and proceed in removing the wall itself.



Concrete Wall – The Wall



Once complete it should be a convincing example of a early poured concrete wall.



Concrete Wall





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Stone Block Wall

Rock Retaining Wall



Rock Wall – The Mold

Glue equally cut length wood wall dams to a .40 styrene base as shown here.



Mix the plaster as previously and pour in between the slats you glued down on the styrene.

Rock Wall – The Pour



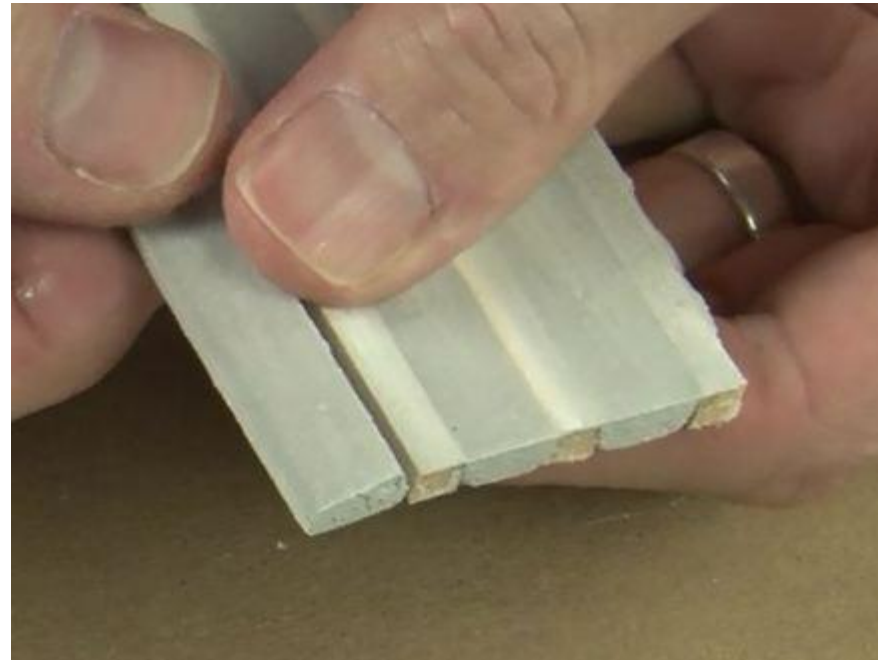
As before,
level out the
pour and
remove
excess plaster
and air
bubbles.

Begin to slowly remove the outer walls.

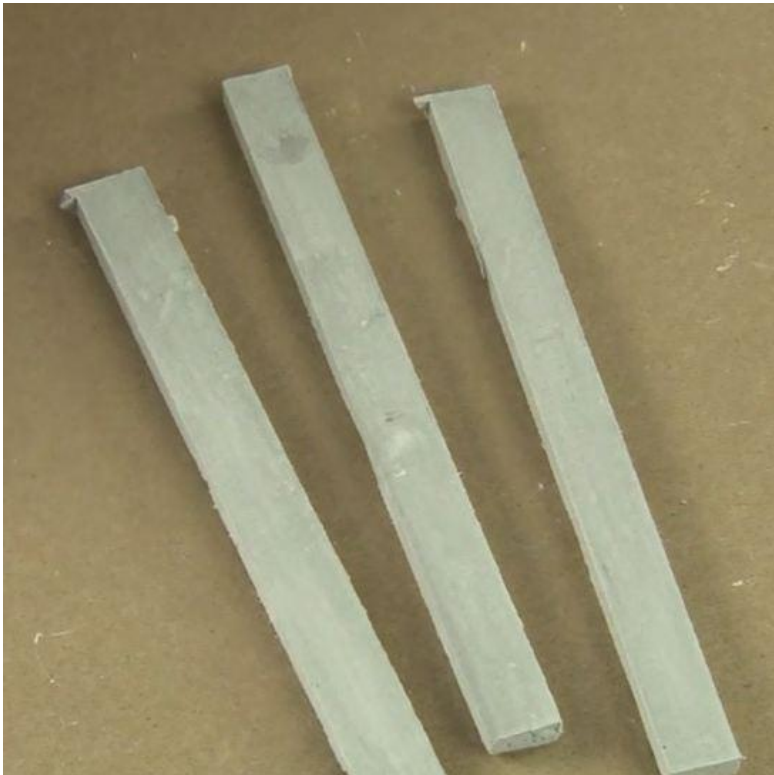


Final Assembly

Carefully separate the bottom of the mold from the plaster.



Rock Wall - Assembly

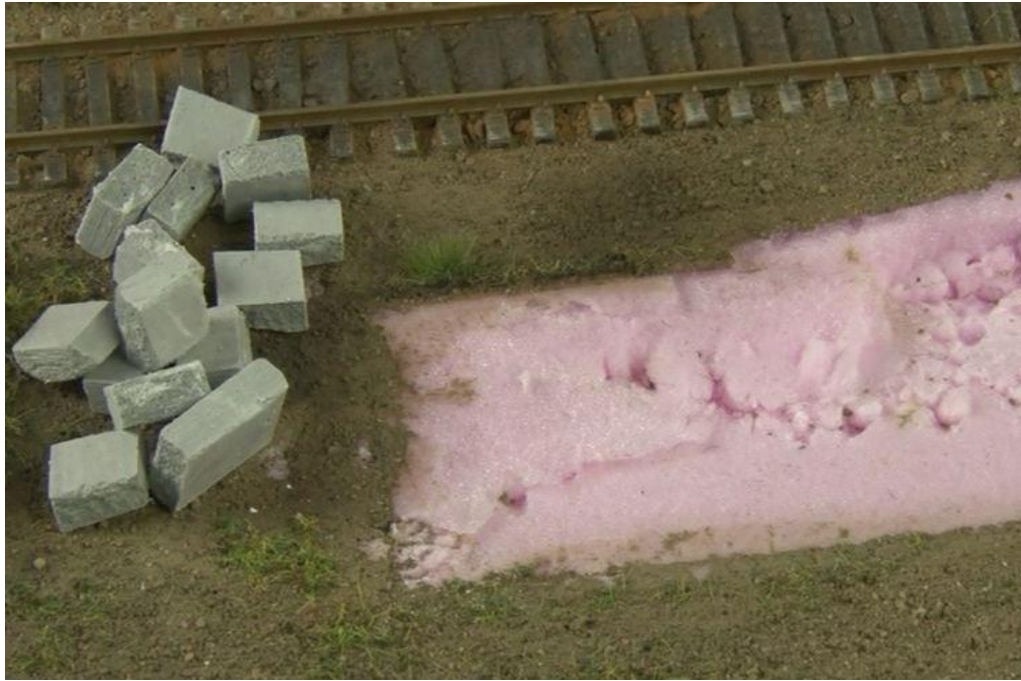


You will have a few
“sticks” of plaster as
seen here.

Measure off about $\frac{1}{2}$ " and using a
razor begin to score (score only)
the sticks.



Rock Wall - Assembly



Begin to glue the rocks in place with the rough side exposed. Use the same pattern as you would laying bricks.

Break off the plaster at the score marks and collect them at the area you are going to place the retaining wall.



Rock Wall - Assembly



Laying in the first score,
gluing them in place with
typical white glue

Finish off the wall
as shown.



Summary

Using simple materials you can make very convincing walls.

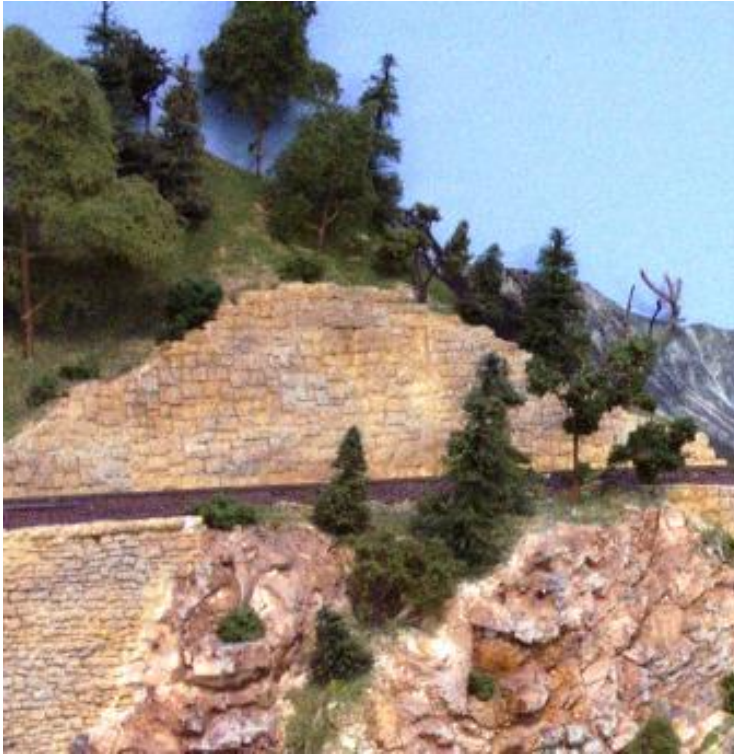




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Other Varieties of Walls

Other Varieties of Walls



Making a master from clay and then pouring the rubber mold material over that makes a really nice plaster mold for larger applications.



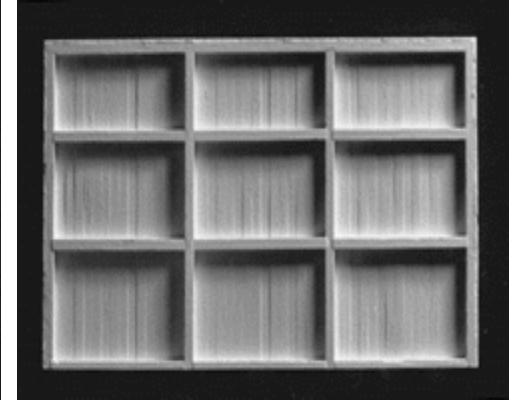
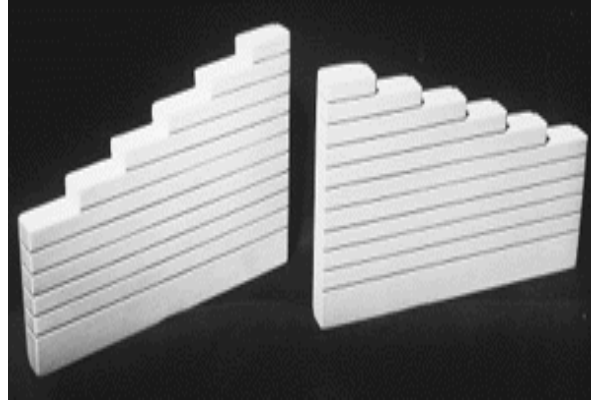
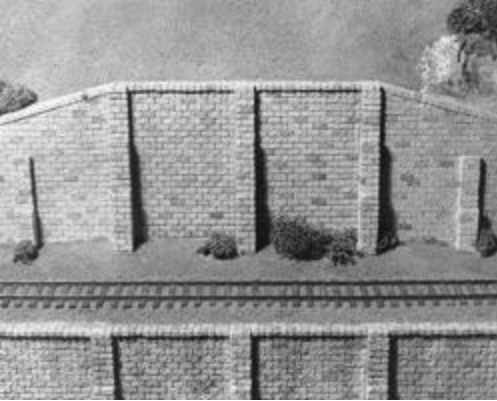
Other Varieties of Walls



Simple wood retaining wall using scale lumber such as this can be used. Just remember basic engineering rules. If it would work in real life then it will look great for a model.

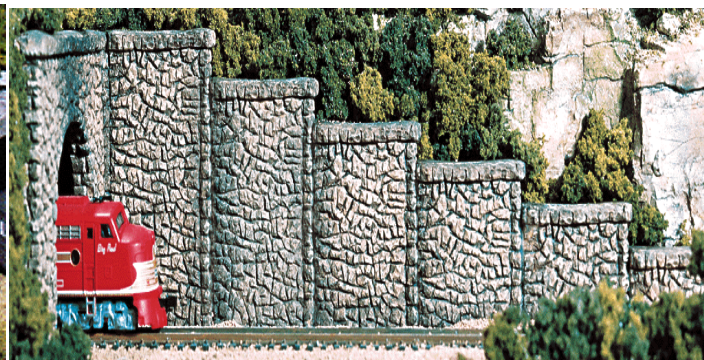
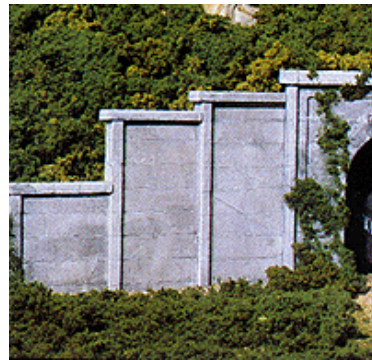
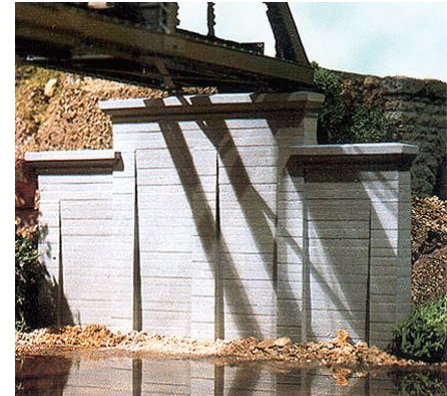
Other Varieties of Walls

Commercially available walls



**AIM
Products**

**Chooch
Enterprises**



**Woodland
Scenic's**



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Thank you